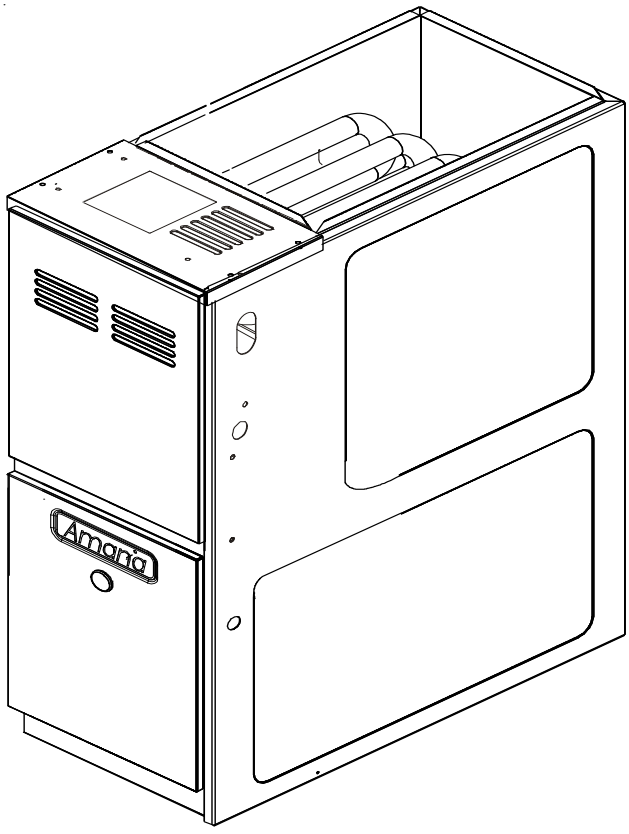
Heating & Air Conditioning
Amana
LASTS AND LASTS AND LASTS.™

# TECHNICAL MANUAL

# AMH8 33-3/8" 80% Gas Furnace 80% AFUE, Twin Comfort™, Multi-Speed, Upflow/Horizontal (NOx)

- Refer to Service Manual RS6610004 for installation, operation, and troubleshooting information.
- All safety information must be followed as provided in the Service Manual.
- Refer to the appropriate Parts Catalog for part number information.
- Model numbers listed on page 3.

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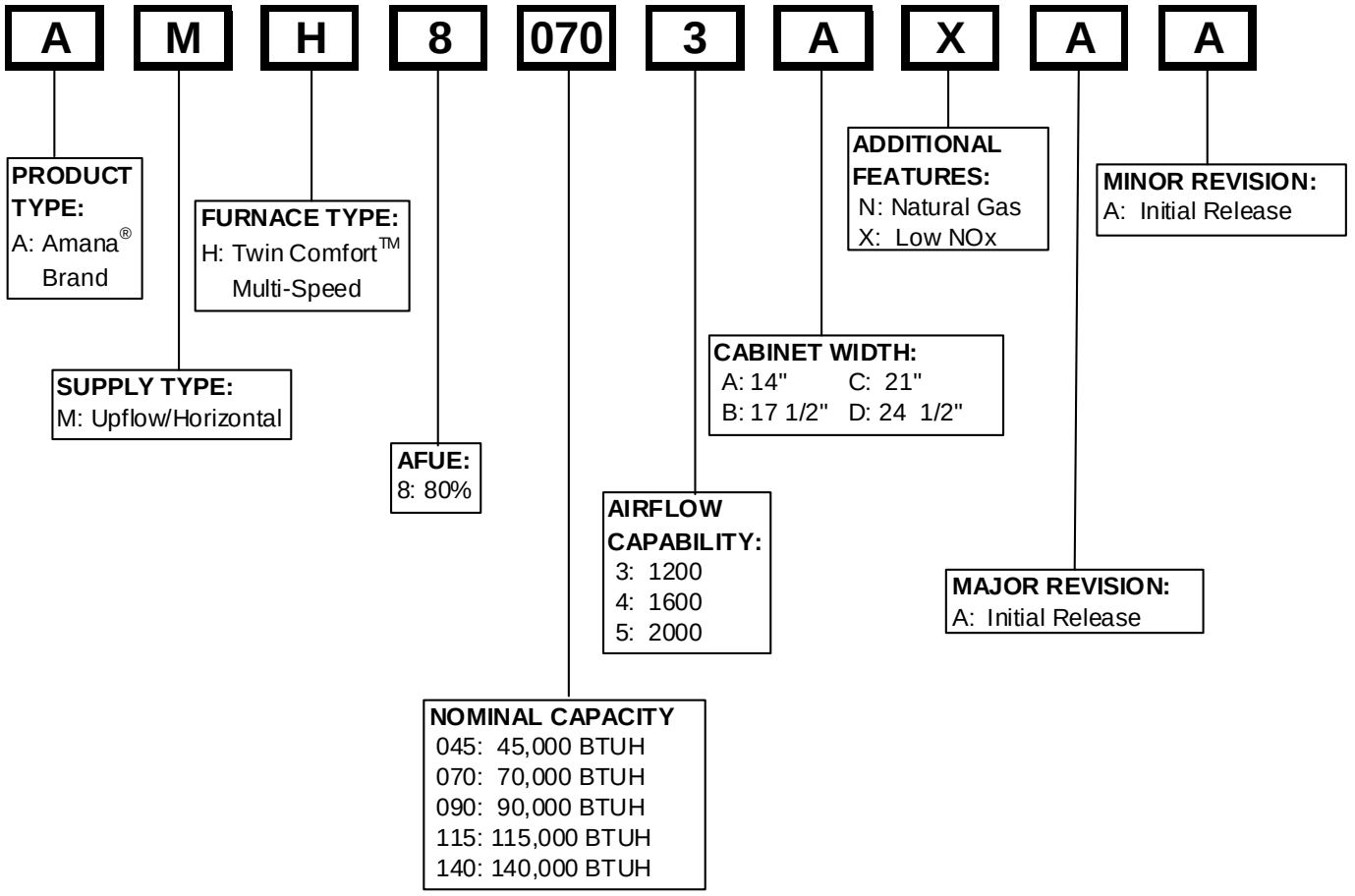
This manual is to be used by qualified, professionally trained HVAC technicians only. Goodman does not assume any responsibility for property damage or personal injury due to improper service procedures or services performed by an unqualified person.

RT6621017r1
April 2010

# PRODUCT IDENTIFICATION

The model and manufacturing number are used for positive identification of component parts used in manufacturing. Please use these numbers when requesting service or parts information.




**⚠ WARNING**

**HIGH VOLTAGE!**

**Disconnect ALL power before servicing or installing this unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.**

**⚠ WARNING** **Goodman will not be responsible for any injury or property damage arising from improper service or service procedures. If you install or perform service on this unit, you assume responsibility for any personal injury or property damage which may result. Many jurisdictions require a license to install or service heating and air conditioning equipment.**

**⚠ WARNING** **Installation and repair of this unit should be performed ONLY by individuals meeting the requirements of an "entry level technician", at a minimum, as specified by the Air-Conditioning, Heating, and Refrigeration Institute (AHRI). Attempting to install or repair this unit without such background may result in product damage, personal injury or death.**

# PRODUCT IDENTIFICATION

The model and manufacturing number are used for positive identification of component parts used in manufacturing. Please use these numbers when requesting service or parts information.

AMH80453AXC*
AMH80703AXC*
AMH80704BXC*
AMH80903BXC*
AMH80904BXC*
AMH80905CXC*
AMH81155CXC*
AMH81405DXC*

** Indicates minor revision & is not used for order entry or inventory management*

**⚠ WARNING** **The United States Environmental Protection Agency ("EPA") has issued various regulations regarding the introduction and disposal of refrigerants introduced into this unit. Failure to follow these regulations may harm the environment and can lead to the imposition of substantial fines. These regulations may vary by jurisdiction. Should questions arise, contact your local EPA office.**

**⚠ WARNING** **Do not connect or use any device that is not design certified by Goodman for use with this unit. Serious property damage, personal injury, reduced unit performance and/or hazardous conditions may result from the use of such non-approved devices.**

**⚠ WARNING** **To prevent the risk of property damage, personal injury, or death, do not store combustible materials or use gasoline or other flammable liquids or vapors in the vicinity of this appliance.**

# PRODUCT DESIGN

***General Operation***

The AMH8 furnaces are equipped with an electronic ignition device used to light the burners and an induced draft blower to exhaust combustion products.

An interlock switch prevents furnace operation if the blower door is not in place. Keep the blower access door in place except for inspection and maintenance.

This furnace is also equipped with a self-diagnosing electronic control module. In the event a furnace component is not operating properly, the control module LED will flash on and off in a factory-programmed sequence, depending on the problem encountered. This light can be viewed through the observation window in the blower access door. Refer to the *Troubleshooting Chart* for further explanation of the LED codes and *Abnormal Operation - Integrated Ignition Control* section in the Service Instructions for an explanation of the possible problem.

The rated heating capacity of the furnace should be greater than or equal to the total heat loss of the area to be heated. The total heat loss should be calculated by an approved method or in accordance with “ASHRAE Guide” or “Manual J-Load Calculations” published by the Air Conditioning Contractors of America.

*Obtain from: American National Standards Institute 1430 Broadway New York, NY 10018

***Location Considerations***

- The furnace should be as centralized as is practical with respect to the air distribution system.
- Do not install the furnace directly on carpeting, tile, or combustible material other than wood flooring.
- When suspending the furnace from rafters or joists, use 3/8" threaded rod and 2” x 2” x 3/8” angle as shown in the Installation and Service Instructions. The length of the rod will depend on the application and clearance necessary.
- When installed in a residential garage, the furnace must be positioned so the burners and ignition source are located not less than 18 inches (457 mm) above the floor and protected from physical damage by vehicles.

**⚠ WARNING**

**TO PREVENT POSSIBLE PERSONAL INJURY OR DEATH DUE TO ASPHYXIATION, THIS FURNACE MUST BE CATEGORY I VENTED. DO NOT VENT USING CATEGORY III VENTING.**

1. Category I Venting is venting at a non-positive pressure. A furnace vented as Category I is considered a fan-assisted appliance and the vent system does not have to be “gas tight.” **NOTE:** Single stage gas furnaces with induced draft blowers draw products of combustion through a heat exchanger allowing, in some instances, common venting with natural draft appliances (i.e. water heaters). All installations must be vented in accordance with National Fuel Gas Code NFPA 54/ANSI Z223.1 - latest edition. In Canada, the furnaces must be vented in accordance with the National Standard of Canada, CAN/CSA B149.1 and CAN/CSA B149.2 - latest editions and amendments.

**NOTE:** The vertical height of the Category I venting system must be at least as great as the horizontal length of the venting system.

2. Line voltage wiring can enter through the right or left side of the furnace. Low voltage wiring can enter through the right or left side of furnace.
3. Conversion kits for propane gas and high altitude natural and propane gas operation are available. See High Altitude Derate chart for details.

# PRODUCT DESIGN

### *Accessibility Clearances (Minimum)*

Unobstructed front clearance of 24" **for servicing** is recommended.

**MINIMUM CLEARANCE TO COMBUSTIBLE MATERIALS - INCHES**

| Sides | Rear | Front* | Vent | | Top |
|---|---|---|---|---|---|
| | | | SW | B | |
| 1 | 0 | 3 | 6 | 1 | 1 |

* 24" clearance for serviceability recommended.

** Single Wall Vent (SW) to be used only as a conncetor. Refer to the venting tables outlined in the Installation Manual for additional venting requirements.

**Note:** In all cases accessibility clearance shall take precedence over clearances from the enclosure where accessibility clearances are greater. All dimensions are given in inches.

### *High Altitude Derate*

When this furnace is installed at high altitude, the appropriate High Altitude orifice kit must be installed. This is required due to the natural reduction in the density of both the gas fuel and combustion air as altitude increases. The kit will provide the proper design certified input rate within the specified altitude range.

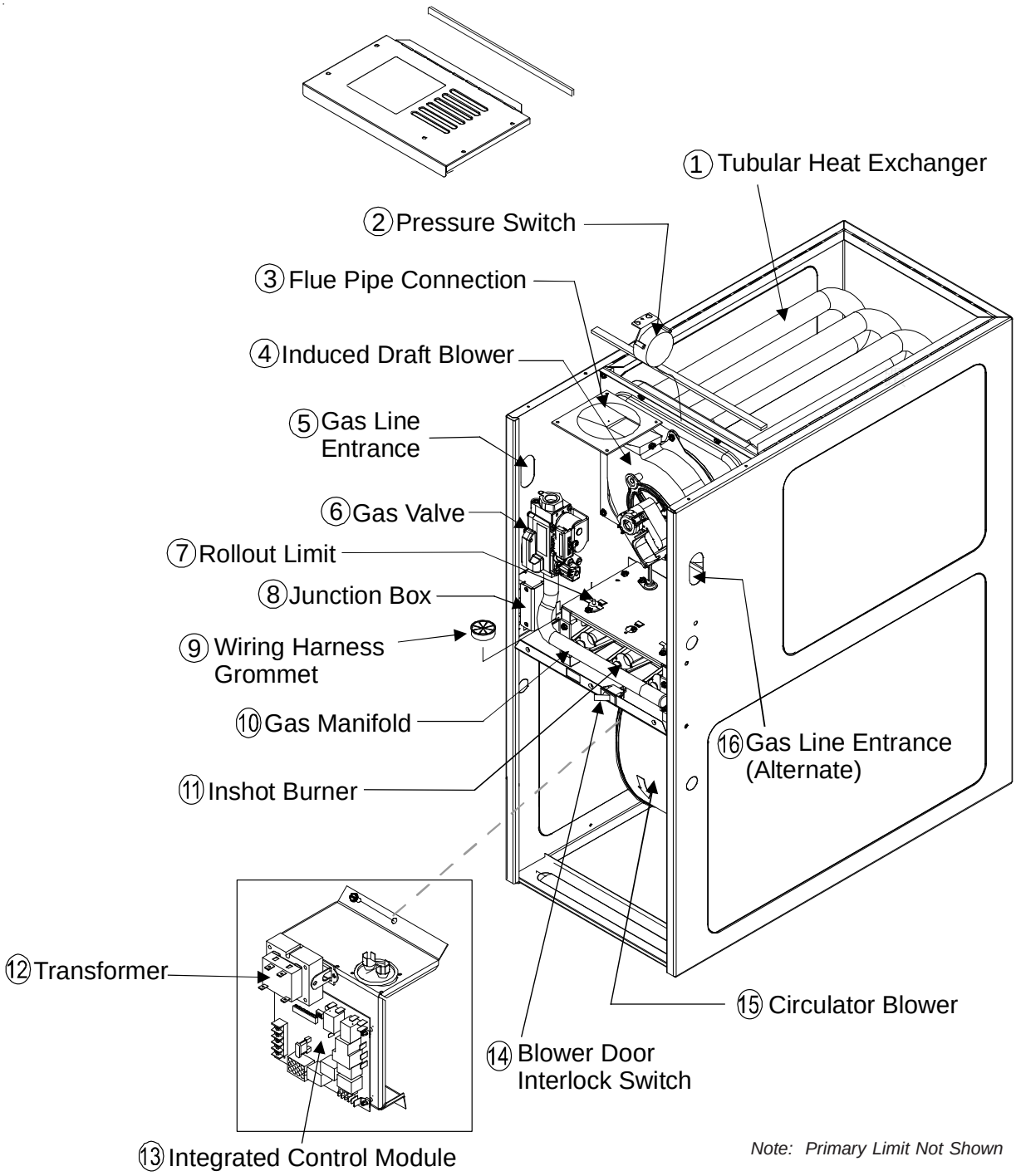
| **INPUT PER BURNER - 22,500 BTUH NATURAL GAS / 20,000 BTUH L.P.** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **ELEVATION ABOVE SEA-LEVEL (FEET)** | | | | | | | |
| | **2000** | **3000** | **4000** | **4500** | **5000** | **6000** | **7000** | **8000** |
| US BURNER ORIFICE | 44/55 | 44/55 | 45/56 | | 45/56 | 46/57 | 47/58 | 47/58 |
| CANADA BURNER ORIFICE | 44/55 | | | 47/57 | | | | |

***HA-02 HIGH ALTITUDE CONVERSION KIT REQUIRED***

Tabled data is based upon the furnace input being reduced for altitudes above sea level. U.S. 4% per 1,000 feet. Canada 10% derate for 2,000-4,000 feet.

High altitude kits are purchased according to the installation altitude and usage of either natural or propane gas. Refer to the chart above for a tabular listing of appropriate altitude ranges and corresponding manufacturer's high altitude Natural Gas and Propane Gas kits. For a tabular listing of appropriate altitude ranges and corresponding manufacturer's High Altitude Pressure Switch kits, refer to either the *Pressure Switch Trip Points & Usage Chart* in this manual or the *Accessory Charts* in Service Instructions.

# COMPONENT IDENTIFICATION

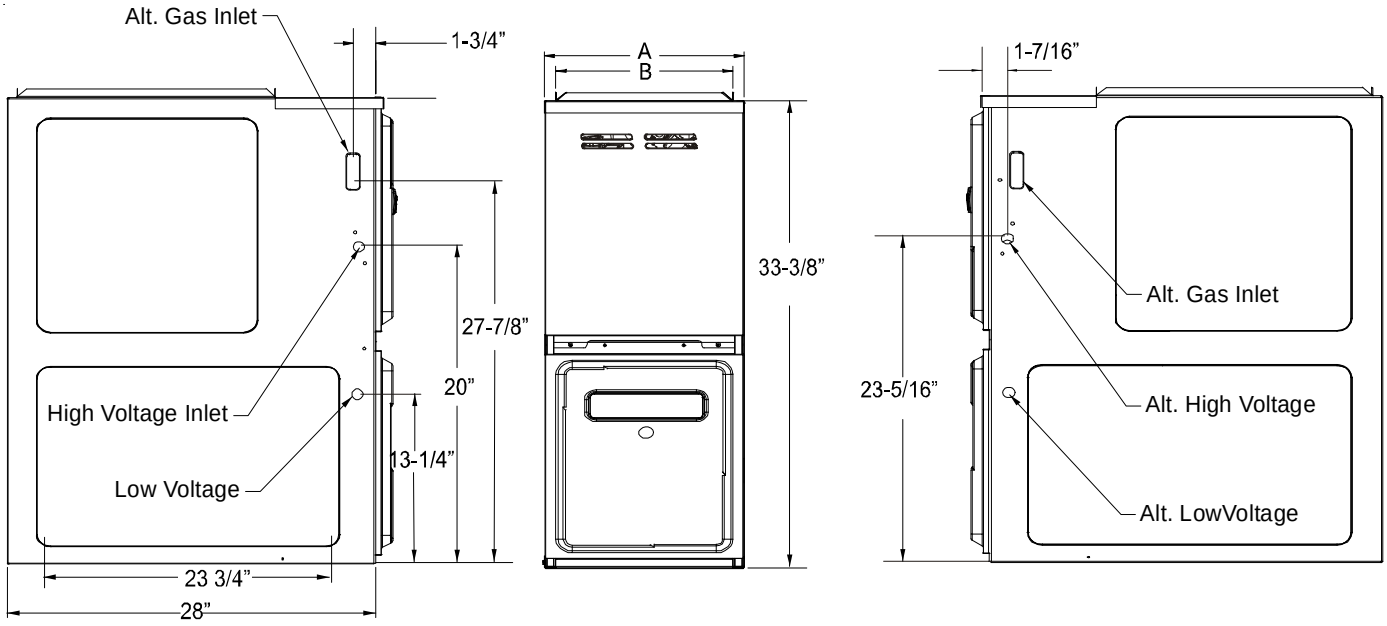



Upflow/Horizontal

1 Tubular Heat Exchanger
2 Pressure Switch
3 Flue Pipe Connection
4 Induced Draft Blower
5 Gas Line Entrance
6 Gas Valve
7 Rollout Limit
8 Junction Box
9 Wiring Harness Grommet
10 Gas Manifold
11 Inshot Burner
12 Transformer
13 Integrated Control Module
14 Blower Door Interlock Swtich
15 Circulator Blower
16 Gas Line Entrance (Alternate)

# PRODUCT DIMENSIONS

## AMH8




| MODELS | A | B |
|---|---|---|
| AMH80453AX**<br>AMH80703AX** | 14 | 12-1/2 |
| AMH80704BX**<br>AMH80903BX**<br>AMH80904BX** | 17-1/2 | 16 |
| AMH80905CX**<br>AMH81155CX** | 21 | 19-1/2 |
| AMH81405DX** | 24-1/2 | 23 |

All dimensions are in inches.

# PRODUCT DESIGN

| PRESSURE SWITCH TRIP POINTS AND USAGE CHART<br>SQUARE NOSE | | |
|---|---|---|
| **MODEL** | **TRIP POINT ID BLOWER PRESSURE SWITCH** | **ID BLOWER PRESSURE SWITCH PART #** |
| **AMH80453AX**** | -0.60 | B1370142 |
| **AMH80703AX**** | -0.60 | B1370142 |
| **AMH80704BX**** | -0.60 | B1370142 |
| **AMH80903BX**** | -0.60 | B1370142 |
| **AMH80904BX**** | -0.60 | B1370142 |
| **AMH80905CX**** | -0.70 | B1370158 |
| **AMH81155CX**** | -0.70 | B1370158 |
| **AMH81405DX**** | -0.75 | 013070159 |

| PRESSURE SWITCH TRIP POINTS AND USAGE CHART<br>ROUND NOSE | | |
|---|---|---|
| **MODEL** | **TRIP POINT ID BLOWER PRESSURE SWITCH** | **ID BLOWER PRESSURE SWITCH PART #** |
| **AMH80453AX**** | -0.60 | B1370142 |
| **AMH80703AX**** | -0.60 | B1370142 |
| **AMH80704BX**** | -0.47 | B1370176 |
| **AMH80903BX**** | -0.75 | B1370179 |
| **AMH80904BX**** | -0.75 | B1370179 |
| **AMH80905CX**** | -0.60 | B1370142 |
| **AMH81155CX**** | -0.70 | B1370158 |
| **AMH81405DX**** | -0.60 | 013070142 |

For installaions in Canada, the AMH8 furnace is certified only to 4,500 ft.

* Negative pressure readings are in inches of water column (*w.c.)

| PRIMARY LIMIT | | | | |
|---|---|---|---|---|
| **Part Number** | **0130F00035** | **20162906** | **20162903** | **0130F00036** |
| **Open Setting (°F)** | 220 | 170 | 160 | 180 |
| **AMH80453A*** | 1 | --- | --- | --- |
| **AMH80703A*** | --- | 1 | --- | --- |
| **AMH80704B*** | --- | 1 | --- | --- |
| **AMH80903B*** | --- | 1 | --- | --- |
| **AMH80904B*** | --- | --- | 1 | --- |
| **AMH80905C*** | --- | --- | --- | 1 |
| **AMH81155C*** | --- | --- | --- | 1 |
| **AMH81405D*** | --- | --- | 1 | --- |

| ROLLOUT LIMIT SWITCHES | |
|---|---|
| **Part Number** | **10123529** |
| **Open Setting (°F)** | 300 |
| **AMH80453AX**** | 2 |
| **AMH80703AX**** | 2 |
| **AMH80704BX**** | 2 |
| **AMH80903BX**** | 2 |
| **AMH80904BX**** | 2 |
| **AMH80905CX**** | 2 |
| **AMH81155CX**** | 2 |
| **AMH81405DX**** | 2 |

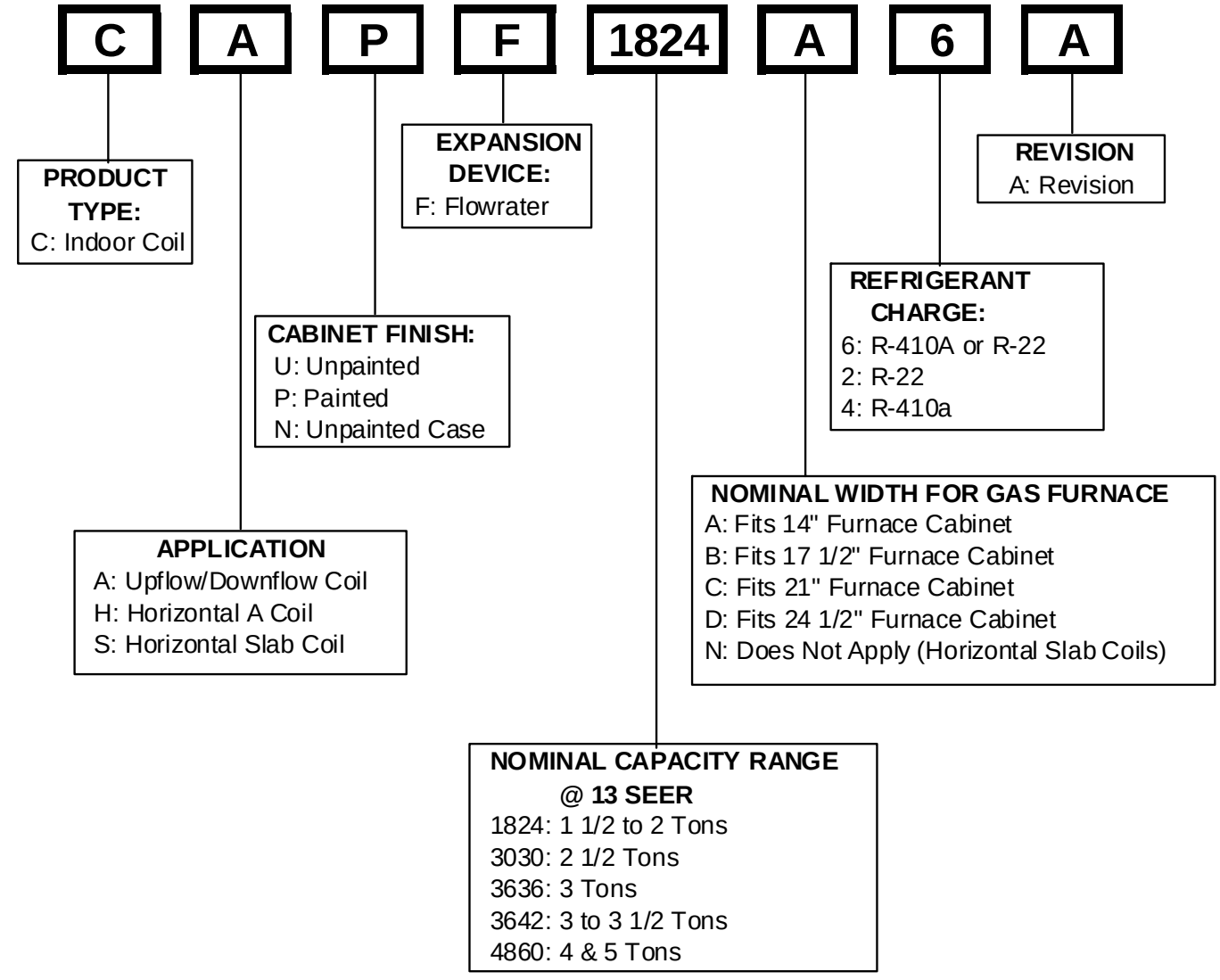
| AUXILIARY LIMIT SWITCHES | |
|---|---|
| **Part Number** | **0130F00038** |
| **Open Setting (°F)** | 120 |
| **AMH80453A*** | 1 |
| **AMH80703A*** | 1 |
| **AMH80704B*** | 1 |
| **AMH80903B*** | 1 |
| **AMH80904B*** | 1 |
| **AMH80905C*** | 1 |
| **AMH81155C*** | 1 |
| **AMH81405D*** | 1 |

# PRODUCT DESIGN

## Coil Matches:

A large array of Amana® brand coils are available for use with the AMH8 furnaces, in either upflow or horizontal applications. These coils are available in both cased and uncased models (with the option of a field installed TXV expansion device). These 80% furnaces match up with the existing Amana® brand coils as shown in the chart below.

## Coil Matches (Amana® brand units using R22 and R-410A):




- All CAPF coils in B, C, & D widths have insulated blank off plates for use with one size smaller furnaces.
- All CAPF coils have a CAUF equivalent.
- All CHPF coils in B, C & D heights have an insulated Z bracket for use with one size smaller furnace.
- All proper coil combinations are subject to being ARI rated with a matched outdoor unit.

# PRODUCT DESIGN

## Thermostats:

The following Amana® brand Thermostats are suggested for use with the AMH8 Furnace Models:

| THERMOSTATS | | | | |
|---|---|---|---|---|
| **Thermostat** | **Mech./Digital** | **Programmable** | **Cool** | **Heat** |
| **CHT-18-60** | Mechanical | Yes | Yes | Yes |
| **CH70TG** | Digital | No | Yes | Yes |
| **CHSATG** | Mechanical | Yes | Yes | Yes |
| **H20TWR** | Mechanical | Yes | No | Yes |

## Filters:

Filters are required with this furnace and must be provided by the installer. The filters used must comply with UL900 or CAN/ULCS111 standards. Installing this furnace without filters will void the unit warranty.

### Upflow Filters

| Side Return(s) | | |
|---|---|---|
| Cabinet Width (in.) | Nominal Filter Size (in.) | Approx. Flow Area ($in^2$) |
| All | 16 x 25 x 1 | 400 |

| Bottom Return | | |
|---|---|---|
| Cabinet Width (in.) | Nominal Filter Size (in.) | Approx. Flow Area ($in^2$) |
| 14 | 12 x 25 x 1 | 300 |
| 17-1/2 | 14 x 25 x 1 | 350 |
| 21 | 16 x 25 x 1 | 400 |
| 24-1/2 | 20 x 25 x 1 | 500 |

Refer to Minimum Filter Area tables to determine filter area requirement. **NOTE:** Filters can also be installed elsewhere in the duct system such as a central return.

| MINIMUM FILTER SIZES | | |
|---|---|---|
| **FURNACE INPUT** | **FILTER SIZE** | **TYPE** |
| 45M | 160 $in^2$ | permanent |
| 70M | 241 $in^2$ | permanent |
| 90M | 320 $in^2$ | permanent |
| 115M | 400 $in^2$ | permanent |
| 140M | 370 $in^2$ | permanent |
| 45M | 320 $in^2$ | disposable |
| 70M | 483 $in^2$ | disposable |
| 90M | 640 $in^2$ | disposable |
| 115M | 800 $in^2$ | disposable |
| 140M | 738 $in^2$ | disposable |

PERMANENT NOMINAL 600 F.M. FACE VELOCITY
DISPOSABLE NOMINAL 300 F.M. FACE VELOCITY

# PRODUCT DESIGN

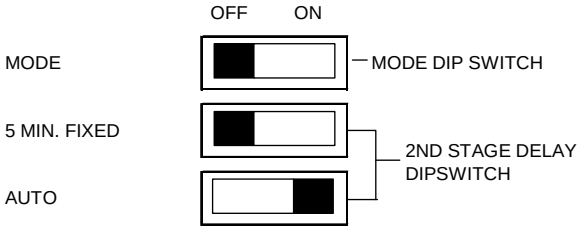
## TwinComfort™ Configuration & Operation

### TwinComfort™

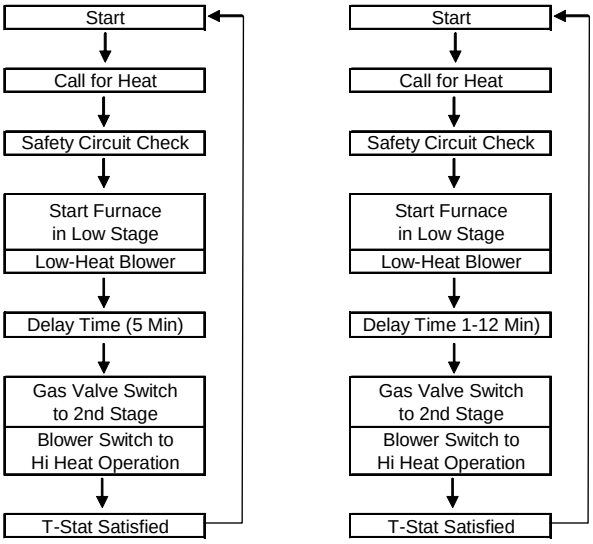
This furnace is capable of the following heating modes:

- Single Stage (Factory Setting)
- Modified Two-Stage
  - > Fixed 5-Min. Low Stage
  - > Auto Time (1-12 Min.) Low Stage

To change from the factory single-stage operation, adjust the dipswitches on the ignition control as follows:




Note: This furnace is designed to be used with a single-stage room thermosat.



# FURNACE SPECIFICATIONS

| MODEL | AMH80453AX** | AMH80703AX** | AMH80704BX** | AMH80903BX** | AMH80904BX** | AMH80905CX** | AMH81155CX** | AMH81405DX** |
|---|---|---|---|---|---|---|---|---|
| Input, Natural Gas (BTUH) | 45,000 | 70,000 | 70,000 | 90,000 | 90,000 | 90,000 | 115,000 | 140,000 |
| Output, Natural Gas (BTUH) [1] | 36,000 | 56,000 | 56,000 | 72,000 | 72,000 | 72,000 | 92,000 | 112,000 |
| Output, LP (BTUH) | 32,000 | 48,000 | 48,000 | 64,000 | 64,000 | 64,000 | 80,000 | 96,000 |
| A.F.U.E. | 80.0% | 80.0% | 80.0% | 80.0% | 80.0% | 80.0% | 80.0% | 80.0% |
| Rated External Static (" w.c.) | 0.20 - 0.50 | 0.20 - 0.50 | 0.20 - 0.50 | 0.20 - 0.50 | 0.20 - 0.50 | 0.20 - 0.50 | 0.20 - 0.50 | 0.20 - 0.50 |
| Temperature Rise (°F) | 25 - 55 | 25 -55 | 20 - 50 | 35 - 65 | 35 - 65 | 35 - 65 | 35 - 65 | 40 - 70 |
| Pressure Switch Trip Point (" w.c.) | -0.70 | -0.70 | -0.75 | -0.75 | -0.75 | -0.75 | -0.90 | -0.80 |
| Blower Wheel (D" x W") | 10x6 | 10x6 | 10x8 | 10x8 | 10x8 | 10x10 | 10x10 | 11x10 |
| Blower Horsepower | 1/3 | 1/3 | 1/2 | 1/3 | 1/2 | 1/2 | 1/2 | 3/4 |
| Blower Speeds | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Max CFM @ 0.5 E.S.P. | 1280 | 1100 | 1610 | 1439 | 1738 | 1854 | 1902 | 2084 |
| Power Supply (Volts/Hz/Ph) | 115/60/1 | 115/60/1 | 115/60/1 | 115/60/1 | 115/60/1 | 115/60/1 | 115/60/1 | 115/60/1 |
| Minimum Circuit Ampacity (MCA) [2] | 8.1 | 8.1 | 12.5 | 8.1 | 12.5 | 12.5 | 12.5 | 14.7 |
| Maximum Overcurrent Device [3] | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Transformer (VA) | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| Primary Limit Setting (°F) | 220 | 170 | 170 | 170 | 160 | 180 | 180 | 160 |
| Auxiliary Limit Setting (°F) | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| Rollout Limit Setting (°F) | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Fan Delay On Heating | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| Off Heating * | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| Fan Delay On Cooling | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Off Cooling | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| Fan Delay On - Fan Only | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gas Supply Pressure (Natural/Propane) (" w.c.) | 7 / 11 | 7 / 11 | 7 / 11 | 7 / 11 | 7 / 11 | 7 / 11 | 7 / 11 | 7 / 11 |
| Manifold Pressure (Natural/Propane) (" w.c.) | 3.5 / 10 | 3.5 / 10 | 3.5 / 10 | 3.5 / 10 | 3.5 / 10 | 3.5 / 10 | 3.5 / 10 | 3.5 / 10 |
| Orifice Size (Natural/Propane) | 43 / 55 | 43 / 55 | 43 / 55 | 43 / 55 | 43 / 55 | 43 / 55 | 43 / 55 | 43 / 55 |
| Number of Burners | 2 | 3 | 3 | 4 | 4 | 4 | 5 | 6 |
| Vent Connector Diameter (inches) | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Shipping Weight (lbs.) | 115 | 125 | 136 | 146 | 146 | 154 | 154 | 153 |

*Off Heating - This fan delay timing is adjustable (90, 120, 150 or 180 seconds). 150 seconds as shipped.

1. These furnaces are manufactured for natural gas operation. Optional kits are available for conversion to propane operation.
2. Minimum Circuit Ampacity calculated as: (1.25 x Circulator Blower Amps) + I.D. Blower Amps. Wire sizes should be determined in accordance with National Electrical Codes.Extensive wire runs will require larger wire sizes.

3 Maximum Overcurrent protections Device refers to maximum recommended fuse or circuit breaker size. May use time delay fuses or HACR-type circuit breakers of the same sizes as noted.

**NOTES:**

1. For elevations above 2000 feet the rating should be reduced by 4% for each 1000 feet above sea level. The furnace must not be derated, orifice changes should only be made if necessary for altitude.
2. The total heat loss from the structure as expressed in TOTAL BTU/HR must be calculated by the manufacturers method or in accordance with the "A.S.H.R.A.E. GUIDE" or "MANUAL J-LOAD CALCULATIONS" published by the AIR CONDITIONING CONTRACTORS OF AMERICA. The total heat loss calculated should be equal to or less than the heating capacity. Output based on D.O.E. test procedures, steady state efficiency times output.

# BLOWER PERFORMANCE SPECIFICATIONS

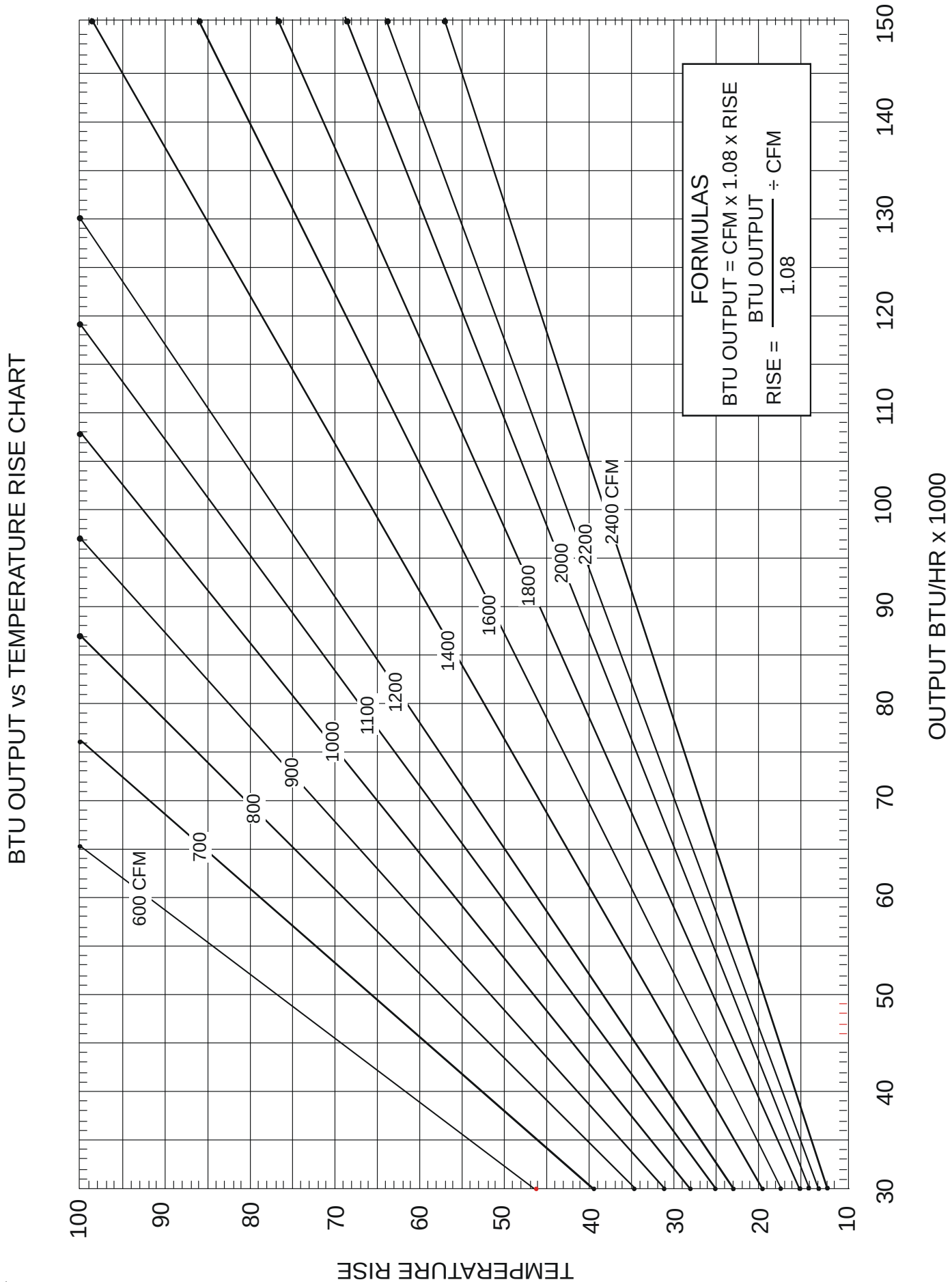
**(CFM & Temperature Rise vs. External Static Pressure)**

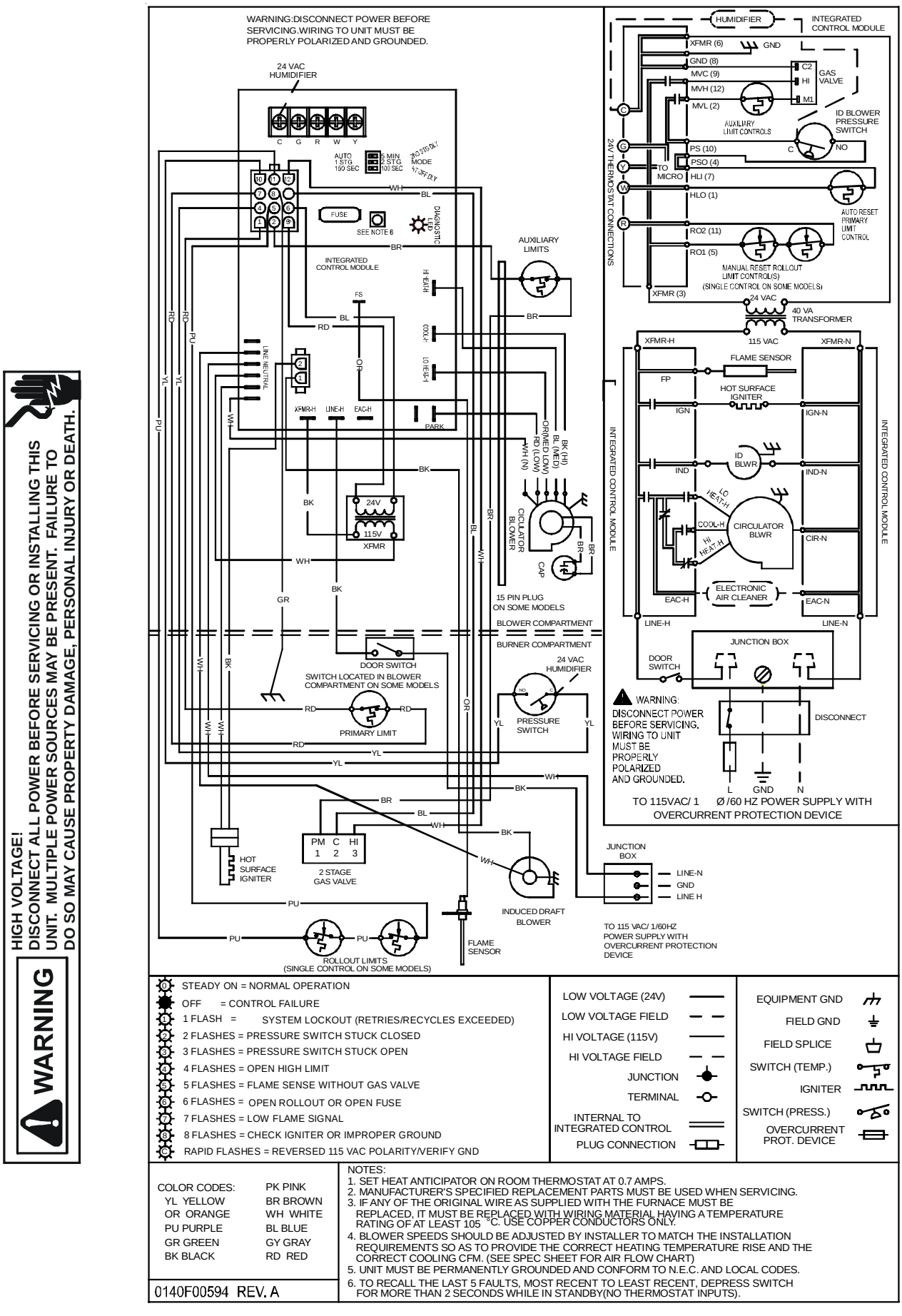
| Model ( Heating Speed As Shipped ) | Motor Speed | Tons AC at 0.5" ESP | EXTERNAL STATIC PRESSURE (Inches Water Column) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0.1 | | 0.2 | | 0.3 | | 0.4 | | 0.5 | | 0.6 | 0.7 | 0.8 |
| | | | CFM | RISE | CFM | RISE | CFM | RISE | CFM | RISE | CFM | RISE | CFM | CFM | CFM |
| | HIGH | 3.0 | 1521 | 22 | 1466 | 23 | 1414 | 24 | 1373 | 24 | 1298 | 26 | 1243 | 1164 | 1075 |
| *M(H/S)80453A*** | MED | 2.5 | 1160 | 29 | 1160 | 29 | 1132 | 29 | 1121 | 30 | 1082 | 31 | 1042 | 997 | 925 |
| (MEDIUM) | MED-LO | 2.0 | 961 | 35 | 955 | 35 | 948 | 35 | 932 | 36 | 913 | 37 | 882 | 821 | 803 |
| | LOW | 1.5 | 781 | 43 | 785 | 42 | 781 | 43 | 773 | 43 | 761 | 44 | 745 | 716 | 668 |
| | HIGH | 3.0 | 1422 | 36 | 1352 | 38 | 1307 | 40 | 1197 | 43 | 1157 | 45 | 1092 | 1075 | 983 |
| *M(H/S)80703A*** | MED | 2.5 | 1098 | 47 | 1081 | 48 | 1051 | 49 | 1039 | 50 | 1021 | 51 | 983 | 924 | 868 |
| (MEDIUM) | MED-LO | 2.0 | 919 | 56 | 913 | 57 | 892 | 58 | 847 | --- | 829 | --- | 818 | 792 | 728 |
| | LOW | 1.5 | 758 | --- | 741 | --- | 741 | --- | 733 | --- | 699 | --- | 677 | 649 | 626 |
| | HIGH | 4.0 | 2134 | --- | 2100 | 25 | 2042 | 25 | 1975 | 26 | 1883 | 28 | 1786 | 1700 | 1601 |
| *M(H/S)80704B*** | MED | 3.5 | 1668 | 31 | 1663 | 31 | 1656 | 31 | 1645 | 32 | 1616 | 32 | 1549 | 1492 | 1391 |
| (MEDIUM) | MED-LO | 3.0 | 1419 | 37 | 1426 | 36 | 1426 | 36 | 1432 | 36 | 1419 | 37 | 1378 | 1328 | 1261 |
| | LOW | 2.5 | 1134 | 46 | 1145 | 45 | 1166 | 44 | 1171 | 44 | 1160 | 45 | 1144 | 1111 | 1071 |
| | HIGH | 3.0 | 1607 | 41 | 1572 | 42 | 1547 | 43 | 1498 | 45 | 1448 | 46 | 1390 | 1302 | 1222 |
| *M(H/S)80903B*** | MED | 2.5 | 1159 | 58 | 1156 | 58 | 1145 | 58 | 1127 | 59 | 1108 | 60 | 1075 | 1033 | 957 |
| (MEDIUM) | MED-LO | 2.0 | 938 | --- | 916 | --- | 916 | --- | 900 | --- | 889 | --- | 865 | 829 | 785 |
| | LOW | 1.5 | 785 | --- | 766 | --- | 743 | --- | 730 | --- | 709 | --- | 683 | 666 | 604 |
| | HIGH | 4.0 | 2051 | --- | 1983 | --- | 1895 | 35 | 1812 | 37 | 1725 | 39 | 1627 | 1530 | 1439 |
| *M(H/S)80904B*** | MED | 3.5 | 1736 | 38 | 1708 | 39 | 1652 | 40 | 1611 | 41 | 1540 | 43 | 1475 | 1394 | 1307 |
| (MEDIUM) | MED-LO | 3.0 | 1493 | 45 | 1668 | 40 | 1459 | 46 | 1429 | 47 | 1389 | 48 | 1339 | 1274 | 1204 |
| | LOW | 2.5 | 1200 | 56 | 1185 | 56 | 1180 | 56 | 1173 | 57 | 1158 | 58 | 1125 | 1125 | 1080 |
| | HIGH | 5.0 | 2290 | --- | 2229 | --- | 2155 | --- | 2047 | --- | 1960 | --- | 1837 | 1712 | 1584 |
| *M(H/S)80905C*** | MED | 4.0 | 1852 | 36 | 1820 | 37 | 1777 | 38 | 1719 | 39 | 1641 | 41 | 1567 | 1469 | 1382 |
| (MEDIUM) | MED-LO | 3.5 | 1615 | 41 | 1592 | 42 | 1556 | 43 | 1516 | 44 | 1470 | 45 | 1405 | 1346 | 1235 |
| | LOW | 3.0 | 1290 | 52 | 1285 | 52 | 1265 | 53 | 1235 | 54 | 1214 | 55 | 1174 | 1044 | 904 |
| | HIGH | 5.0 | 2323 | 37 | 2225 | 38 | 2120 | 40 | 2040 | 42 | 1974 | 43 | 1801 | 1688 | 1577 |
| *M(H/S)81155C*** | MED | 4.0 | 1858 | 46 | 1847 | 46 | 1799 | 47 | 1744 | 49 | 1674 | 51 | 1577 | 1493 | 1399 |
| (MEDIUM) | MED-LO | 3.5 | 1596 | 53 | 1587 | 54 | 1571 | 54 | 1552 | 55 | 1493 | 57 | 1397 | 1326 | 1217 |
| | LOW | 3.0 | 1291 | --- | 1272 | --- | 1261 | --- | 1257 | --- | 1205 | --- | 1168 | 1118 | 1060 |
| | HIGH | 5.0 | 2469 | 42 | 2389 | 43 | 2300 | 45 | 2223 | 47 | 2131 | 49 | 2027 | 1902 | 1786 |
| *M(H/S)81405D*** | MED | 4.0 | 1575 | 66 | 1558 | 67 | 1545 | 67 | 1513 | 69 | 1500 | 69 | 1419 | 1354 | 1271 |
| (MEDIUM) | MED-LO | 3.5 | 1402 | --- | 1380 | --- | 1343 | --- | 1319 | --- | 1296 | --- | 1245 | 1183 | 1106 |
| | LOW | 3.0 | 1200 | --- | 1186 | --- | 1161 | --- | 1127 | --- | 1082 | --- | 1042 | 995 | 926 |

**NOTES:**

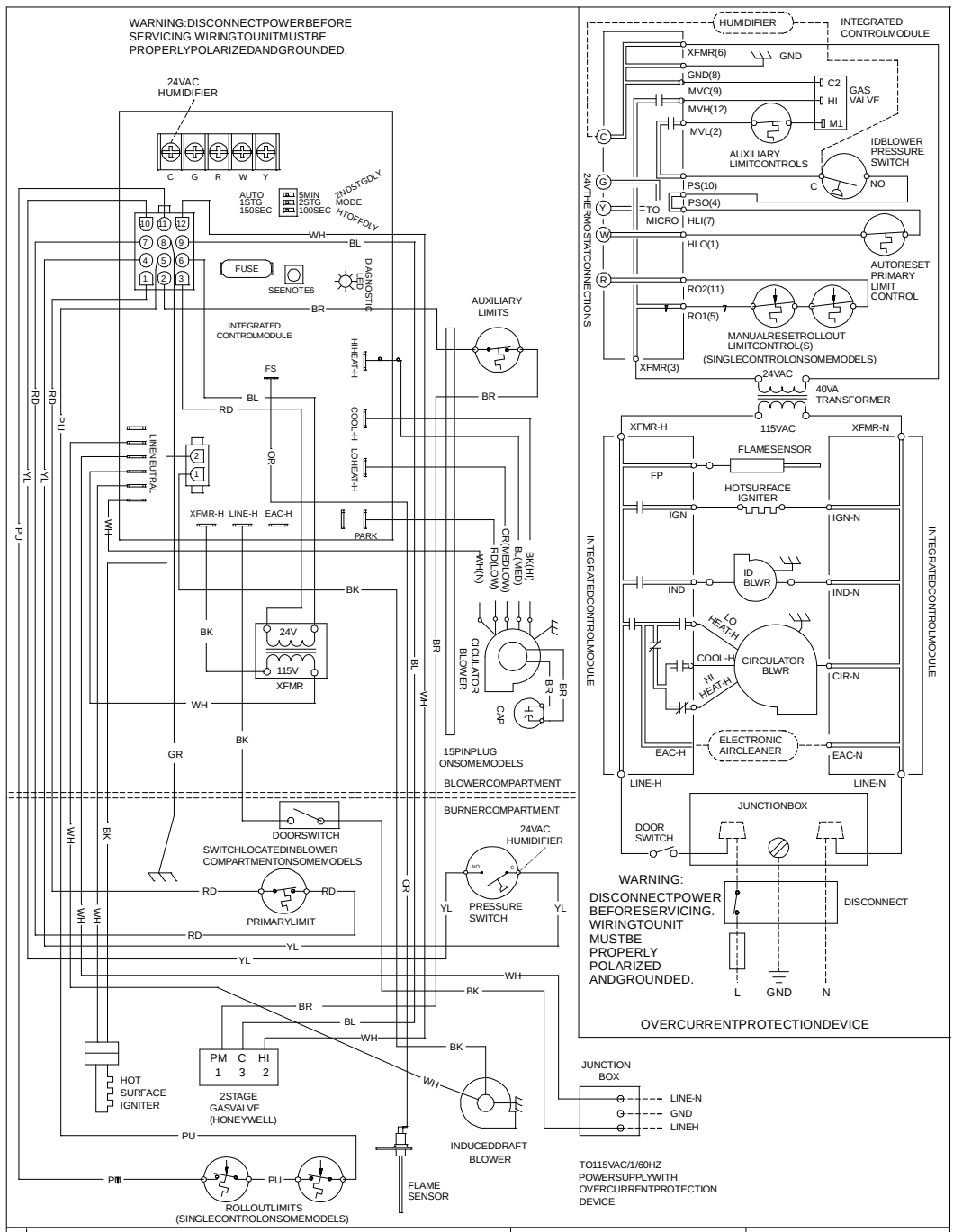
1. CFM in chart is without filters(s). Filters do not ship with this furnace, but must be provided by the installer.
2. All furnaces ship as high speed cooling. Installer must adjust blower cooling speed as needed.
3. For most jobs, about 400 CFM per ton when cooling is desirable.
4. INSTALLATION IS TO BE ADJUSTED TO OBTAIN TEMPERATURE RISE WITHIN THE RANGE SPECIFIED ON THE RATING PLATE.
5. The chart is for information only. For satisfactory operation, external static pressure must not exceed value shown on rating plate. The shaded area indicates ranges in excess of maximum external static pressure allowed when heating. The data for 0.6" w.c. to 0.8" w.c. is shown for air conditioning purposes only.
6 The dashed (---) areas indicate a temperature rise not recommended for this model.
7. The above chart is for U.S. furnaces installed at 0-2000 feet. At higher altitudes, a properly derated unit will have approximately the same temperature rise at a particular CFM, while the ESP at that CFM will be lower.

# BLOWER PERFORMANCE SPECIFICATIONS






Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.




**HIGH VOLTAGE!**
**DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.**

**WARNING**

- 0 STEADYON=NORMALOPERATION
- OFF =CONTROLFAILURE
- 1 1FLASH = SYSTEMLOCKOUT(RETRIES/RECYCLESEXCEEDED)
- 2 2FLASHES=PRESSURESWITCHSTUCKCLOSED
- 3 3FLASHES=PRESSURESWITCHSTUCKOPEN
- 4 4FLASHES=OPENHIGHLIMIT
- 5 5FLASHES=FLAMESENSEWITHOUTGASVALVE
- 6 6FLASHES= OPENROLLOUTOROPENFUSE
- 7 7FLASHES=LOWFLAMESIGNAL
- 8 8FLASHES=CHECKIGNITERORIMPROPERGROUND
- C RAPIDFLASHES=REVERSED115VACPOLARITY/VERIFYGND

LOWVOLTAGE(24V)
LOWVOLTAGEFIELD
HIVOLTAGE(115V)
HIVOLTAGEFIELD
JUNCTION
TERMINAL
INTERNALTO INTEGRATEDCONTROL
PLUGCONNECTION

EQUIPMENTGND
FIELDGND
FIELDSPLICE
SWITCH(TEMP.)
IGNITER
SWITCH(PRESS.)
OVERCURRENT PROT.DEVICE

COLORCODES:

| | |
|---|---|
| YL YELLOW | PKPINK |
| OR ORANGE | BRBROWN |
| PUPURPLE | WH WHITE |
| GRGREEN | BLBLUE |
| BKBLACK | GYGRAY |
| | RD RED |

0140F00662 REV.A

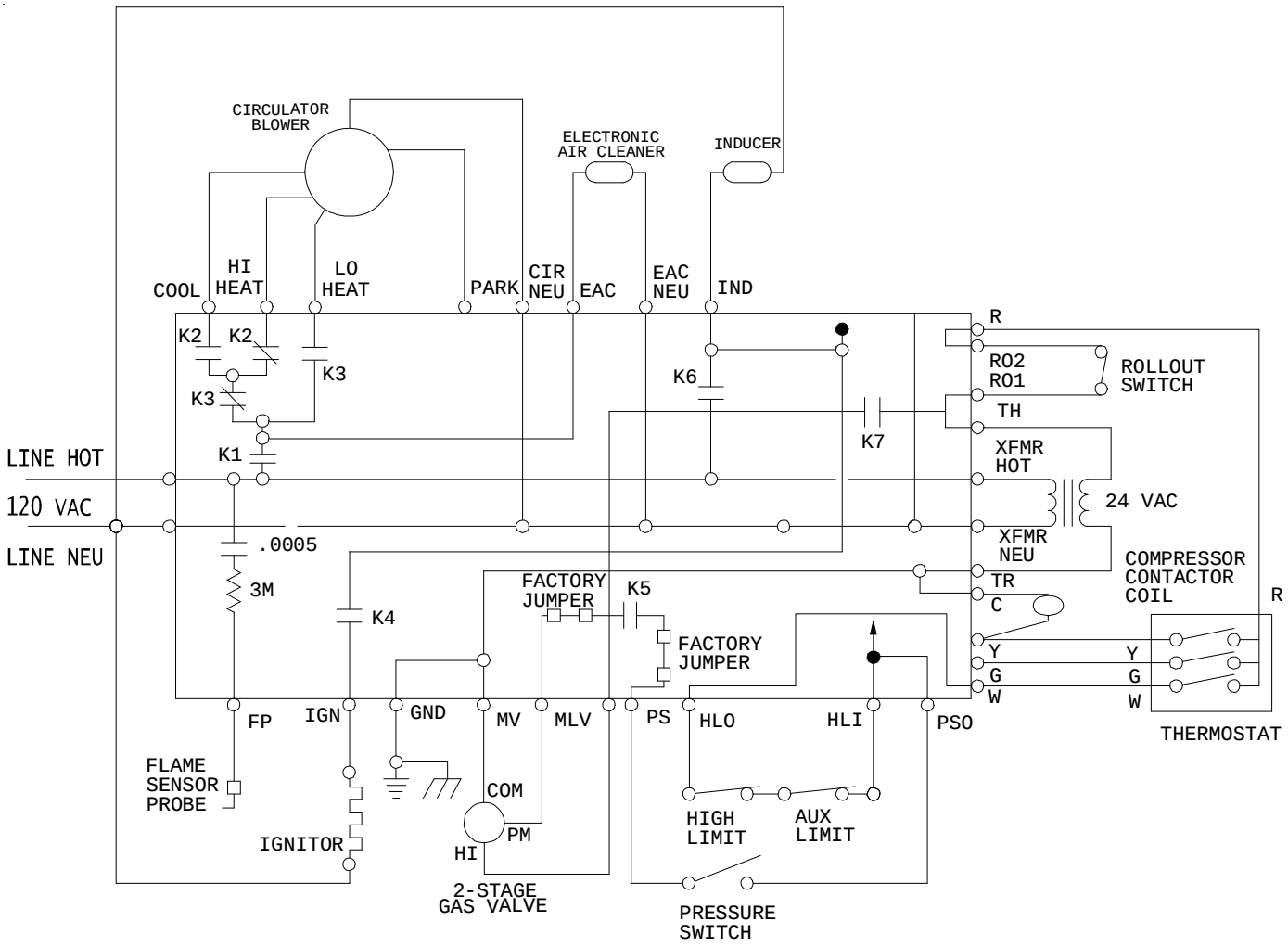
NOTES:
1.SETHEATANTICIPATORONROOMTHERMOSTATAT0.7AMPS.
2.MANUFACTURER'SSPECIFIEDREPLACEMENTPARTSMUSTBEUSEDWHENSERVICING.
3.IFANYOFTHEORIGINALWIREASSUPPLIEDWITHTHEFURNACEMUSTBE REPLACED,ITMUSTBEREPLACEDWITHWIRINGMATERIALHAVINGATEMPERATURE RATINGOFATLEAST105 °C.USECOPPERCONDUCTORSONLY.
4.BLOWERSPEEDSSHOULDBEADJUSTEDBYINSTALLERTOMATCHTHEINSTALLATION REQUIREMENTSSOASTOPROVIDETHECORRECTHEATINGTEMPERATURERISEANDTHE CORRECTCOOLINGCFM.(SEESPECSHEETFORAIRFLOWCHART)
5.UNITMUSTBEPERMANENTLYGROUNDEDANDCONFORMTON.E.C.ANDLOCALCODES.
6.TORECALLTHELAST5FAULTS,MOSTRECENTTOLEASTRECENT,DEPRESSSWITCH FORMORETHAN2SECONDSWHILEINSTANDBY(NOTHERMOSTATINPUTS).

Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.

# SCHEMATICS

**WARNING**

**HIGH VOLTAGE!**
**DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.**




**TYPICAL SCHEMATIC**
**AMH8 ____** MODEL FURNACES**
**WR 50M56-289 INTEGRATED IGNITION CONTROL**

This schematic is for reference only. Not all wiring is as shown above. Always refer to the appropriate wiring diagram for the unit being serviced.